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Nutrition Knowledge Levels of Male Boxers in Junior Category

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Abstract

The purpose of this study is to determine the nutritional habits and nutritional knowledge levels of athletes competing in the boxing junior men category (15-16 years old). The sample of the study consists of athletes within the age group of 15-16 competing in the Turkish High School Junior Men's Boxing Championship. The nutrition level scale was applied to the athletes. The data were analysed using Independent Student T test and one-way variance analysis. The majority of the boxers involved in the study were found to be fed enough, received four fundamental food groups on a balanced basis in their meals, made changes in their diet on the days they do sports, paid attention to their pre-workout and post-workout nutrition, and thought that regular nutrition has a positive effect on performance, in addition, it was found that the scale scores were moderate according to the age of sports, national athlete status, weight, nutrition, eating four fundamental food groups of meals, taking care of nutrition during their days and after training, it was also found that there was no statistically significant difference between the groups, that there was a positive effect on the performance of regular nutrition with the boxers who paid attention to pre-workout nutrition and that the boxers with higher nutritional knowledge were significantly higher than the others, and that the nutritional knowledge levels were also influenced by their family income levels. In this research, it can be said that the nutrition knowledge levels of star men boxers are in moderate level and it can be said that the levels of knowledge, especially those with national athlete status and high sports age, is not different from others, in contrast to expectations.

Keywords: junior athlete, boxing, nutrition knowledge

1. Introduction

The studies on diet generally emphasize on balanced and adequate nutrition. Adequate and balanced nutrition refers to taking energy and nutritional elements based on a variety of factors such as age, gender, physical activity, genetic, physiological features, disease and so on and use them without losing their nutritious values and being detrimental to health (Arli et al., 2006). The diet is of significance for taking the energy required for sportive exercising or competition physical activities as well as its effect on development, health and rehabilitation of basal metabolism. Gunay (1999) observes that athletes can reach a high performance via completing their energy reserves with an accurate and balanced diet. That means that a high performance during a competition does not only rely on exercising but also on accurate and balanced diet (Gunay, 1999). Increasing the physical performance is possible by taking the accurately adjusted nutrition in line with the needs of the athlete, taking into account the training and competition conditions (Yildiran, 1992). The athletes especially in their growth and development phase should pay a particular attention to their diet for a healthy physical development (Kocoglu, 1997). Athletes should make sure an adequate consumption of energy and nutritional foods, maintain body fat and fat free mass index in line with the sports branch and provide an optimal recovery and liquid balance post-exercise in the overall diet (Insel et al., 2004). Considering the fact that diet is effective on the most basic physiological needs and sportive performance, all athletes should be knowledgeable about diet. Therefore, the research seeks to analyse the knowledge level of star male boxers on diet.

2. Method

2.1 Research Population and Sample

The research sample consists of 184 boxers, who are studying at 9th, 10th, 11th and 12th grades, who competed in the Inter-High School Star Male Boxing Championship in the province of Elazıg between April 8-14, 2017 and the research population involves boxers competing in Star-Male box category in Turkey.

2.2 Measurement Tools

The research uses "Nutritional Knowledge Level", which was developed by Sabbag (2009), consisting of 35 questions. In the scale, right answers will be rated as 1 and wrong answers as 0 (Sabbag, 2009). We have conducted a reliability analysis to test the applicability of the scale to the star (15-16 years old) category and the scale reliability scale is found 0.82. To Kalayci (2006), if the scale reliability is $.00 \leq \alpha < .40$, the scale is not reliable depending on the alpha coefficient and if it is $.40 \leq \alpha < .60$, scale reliability is low and if it is $.60 \leq \alpha < .80$, it is reliable and if it is $.80 \leq \alpha < 1.00$, the scale is highly reliable (Kalayci, 2006). Depending on such values, the scale is highly reliable for the children in the star category.

2.3 Statistical Analysis

We have analysed the research data in the SPSS 22 software. We have conducted normality analysis to identify whether the data has been distributed in a normal way and observed that dataset has been distributed normally. We have calculated the frequency and percentile of the data of the demographic features of the participants of the research. We have applied Independent Student T test for two-group comparisons as to whether the scale scores differ or not depending on the variables of personal characteristics of boxers and their nutritional status and applied One Way Anova-Tukey tests for comparing more than two groups.

3. Results

Table 1. Personal Characteristics and Nutritional Status of Boxers

Variable	Groups	f	%
Sporting Age	1-3 years	157	85.3
	More than 3 years	27	14.7
Nationality Status	National	33	17.9
	Not national	151	82.1
Can you feed enough?	Yes	158	85.9
	No	26	14.1
Do you take 4 basic food groups (milk, meat products, vegetable- fruit, cereals and dried legumes) in your meals in a balanced way?	Yes	131	71.2
	No	53	28.8
Can you change your diet on the days you do sports?	Yes	121	65.8
	No	63	34.2
Would you pay attention to your pre-training diet?	Yes	154	83.7
	No	30	16.3
Do you pay attention to your diet after the training?	Yes	152	82.6
	No	32	17.4
Do you think that regular diet has a positive effect on performance?	Yes	169	91.8
	No	15	8.2
Family Income Level (TL: Turkish lira)	1300 TL or less	66	35.9
	1405-2105 TL	49	26.6
	2016-2806 TL	27	14.7
	2807 TL and above	42	22.8
Branch Levels (according to weights	Light	63	34.2
	Middle	74	40.2
	Heavy	47	25.5

We have observed that 85.3% of the participant boxers have been working out less than three years and 14.7% have been working out more than three years and 17.9% are national athletes, 85.9% can maintain an adequate diet, 71.2% take four fundamental nutritional groups (milk, meat, produce, cereals and pulses) in a balanced way and 65.8% change their diet on the day of exercise, 83.7% pay attention to their diet pre-workout, 91.8% think that regular diet has a positive effect on their performance, in terms of family income level, 35.9% have 1300 TL and under income level, 26.6% have 1405-2105 TL, 14.7% have 2016-2806 TL and 22.8% have 2807 and over income level and 34.2% are Lightweight boxers, 40.2% Middleweight boxers and 25.5% is Heavyweight boxers.

Table 2. Comparing Nutritional Knowledge Level Scores according to Personal Characteristics and Nutritional Status of Boxers with Independent Student T Test

Variable	Groups	f	%	X	ss	t	P
Sport Age	1-3 years	157	85.3	17.39	6.15	-.099	.921
	More than 3 years	27	14.7	17.52	5.02		
Nationality Status	National	33	17.9	16.73	5.59	-.725	.469
	Not national	151	82.1	17.56	6.08		
Can you feed enough?	Yes	158	85.9	17.51	5.97	.818	.579
	No	26	14.1	16.81	6.20		
Do you take 4 basic food groups (milk, meat products, vegetable-fruit, cereals and dried legumes) in your meals in a balanced way?	Yes	131	71.2	17.52	6.06	.377	.707
	No	53	28.8	17.15	5.86		
Can you change your diet on the days you do sports?	Yes	121	65.8	17.74	6.16	1.013	.313
	No	63	34.2	16.79	5.63		
Would you pay attention to your pre-training diet?	Yes	154	83.7	17.79	5.93	1.961	.051*
	No	30	16.3	15.47	5.99		
Do you pay attention to your diet after the training?	Yes	152	82.6	17.78	5.71	1.838	.068
	No	32	17.4	15.66	6.99		
Do you think that regular diet has a positive effect on performance?	Yes	169	91.8	17.71	6.07	2.284	.023*
	No	15	8.2	14.07	3.65		

*p<.05

Comparing the nutritional knowledge level of the boxers participated in the research in Table 2, we observed that they have a medium knowledge level depending on the sports age, playing in national team, adequate diet, consuming four fundamental nutritional groups in their meals, paying attention to their diet on exercise day and post-workout diet, and observed no statistically significant difference between the groups, and noted that the nutritional knowledge level of the boxers who pay attention to their pre-work out diet and those think that regular diet has a positive effect on performance are significantly higher than other boxers (p<.05).

Table 3. Comparison of Nutritional Knowledge Level Scores with One Way Anova - Tukey Tests According to Personal Characteristics and Nutritional Status of Boxers

Variable	Groups	f	%	X	ss	ANOVA					TUKEY
							Sum of Squares	Mean Square	F	P	
Family Income Level (TL: Turkish lira)	1300 TL or less	66	35.9	17.58	6.28	BG	387.455	129.152	3.766	.012*	2-4*(.007)
	1405-2105 TL	49	26.6	15.24	5.86	WG	6173.153	34.295			
	2016-2806 TL	27	14.7	18.07	4.81	Total	6560.609				
	2807 TL and above	42	22.8	19.26	5.75						
Branch Levels (according to weights)	Light	63	34.2	17.76	5.68	BG	12.251	6.126	.169	.844	-
	Middle	74	40.2	17.18	6.43	WG	6548.358	36.179			
	Heavy	47	25.5	17.32	5.75	Total	6560.609				

*p<.05, BG: Between Groups, WG: Within Groups

Table 3 illustrates that comparing the nutritional knowledge of the boxers participating in the research; there was no statistically significant difference between the groups according to the weight groups and there is a statistically significant difference according to the family income levels (p<.05) and we noted that this difference is observed between group with 1405-2015 TL family income and that with 2807 TL and over.

4. Discussion

Boxing is a sport that demands exceptional characteristics just like many other performance sports. The impact of nutrition on performance is a topic that scientists have studied for many years. However, there are limited number of studies on nutritional knowledge level of the athletes in a sport which challenges the energy system in anaerobic and aerobic sense like boxing. The fundamental objective of this research is to identify the level of the nutrition parameter, which has a direct relation with performance, especially by the boxers in their development period and compare it with the diverse demographic features.

While there are no significant difference in terms of nutritional knowledge level between the national athletes and non-national athletes, those having adequate diet and those do not, those taking four fundamental food groups in a balanced way and those do not, those changing their diet on exercise day and those do not, those paying attention to post-workout diet and those do not and weight levels, there are significant difference between the boxers who pay attention to their pre-workout diet and those do not, those who think regular diet has a positive effect on performance and those do not and those with 1405-2105 TL family income level and boxers with 1405-2105 TL. Furthermore, we have observed that all athletes have a medium level of nutritional knowledge. Literature review indicates the similar results in the research on athletes and other people.

In their research on university students who exercise actively, Ozdemir and Ozdilek (2010) noted that the most of the participants have a lacking and erroneous nutritional practices during exercise and competition period (Ozdemir and Ozdilek, 2010), Suel (2000) observed that the half of the male basketball players pay attention to their diet and have an insufficient nutritional knowledge (Suel, 2000), in a research on football coaches, Sirin (2001) stated that the most of the coaches do not find their knowledge level on athlete diet as well as the knowledge level of the athletes they work with sufficient and they do not have a sufficient knowledge on the foods they should not eat prior to competition (Sirin, 2001) and in his research on nutritional knowledge, attitude and behaviors on high school students, Kaya (2015) observed that the most of the students have an insufficient knowledge on nutrition (Kaya, 2015) and in their research Saygin, Goral and Gelen, (2009) noted that the nutritional habits of the football players are not in a good shape and they have diet problems (Saygin, Goral and Gelen, 2009).

Everybody is expected to be knowledgeable on nutrition, which is one of the fundamental factors of a healthy living and such lack of knowledge does not apply only to athletes. Aktas (1988) notes that the majority of the students such as 70.41% has an insufficient nutritional knowledge (Aktas, 1988). Korkmaz (2010) observes that university students do not have a regular diet habits (Korkmaz, 2010), Gundogdu (2009) notes that only around one-third of the pre-school teachers have a good nutritional knowledge level (Gundogdu, 2009).

The following learning outcomes are included in the secondary school biology curriculum on the subject of diet. 9th grade curriculum "student establishes a relationship between fat, carbohydrates, protein, vitamins and minerals and healthy diet", 10th grade curriculum "student describes nutrition patterns in living things with examples" and 11th grade curriculum curricula “student infers about what needs to be done to protect the healthy structure of the support and movement system." 12th grade curriculum does not involve a subject of nutrition (MEB, 2007). Analysing this curriculum, we can observe that there is no learning outcome on pre, during or post physical activity nutrition.

The research concludes that the majority of the star male boxers;

- ✓ can eat sufficiently,
- ✓ take the four fundamental food groups (dairy, meat products, produce, grains and legumes) in a balanced way,
- ✓ can their diet on the day of exercise,
- ✓ pay attention to their nutrition pre and post workout,
- ✓ think that regular diet has a positive effect on performance
- ✓ that there is no statistically significant difference between the groups in terms of sport age, playing in national team, adequate diet, consuming four fundamental nutritional groups in their meals, paying attention to their diet on exercise day and post-workout diet and they have medium knowledge level on nutrition,
- ✓ that there are significant difference between the boxers who pay attention to their pre-workout diet and those who think regular diet has a positive effect on performance in comparison to other in terms of nutritional knowledge level,
- ✓ and family income levels affect the nutritional knowledge level.

In an overall analysis of research results, we note that the nutritional knowledge level of the star male boxers is at medium level and especially the knowledge level of athletes with higher sports age and playing in national team is no

different than others contrary to expectations. As our research group consists of high school students, we think that their low level of nutritional knowledge may be due to the school curriculum. We suggest that such research should be extended to athletes with different age and branch groups and the importance of nutrition should be taught to all athletes and it should be sufficiently added to the school curriculum.

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OA and EK planned the study and wrote the paper, EA and MO prepared and implemented the surveys.

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